AMENDED CLAIM SET:

1. (currently amended) A method of producing a bioactive composite material, comprising apatite, for dental or orthopaedic use, which material comprises groups with a tendency for decomposition, where a densification of the material is performed at high temperatures under pressure, characterized in that the densification is performed in a closed system where applying of a pressure ~~partially or completely~~ above 100 MPa takes place at a temperature below 900°C for ceramic based composites and at or below 600°C for metal based composites, before an end temperature for the densification is reached, and before commencing substantial decomposition of apatite phase.

2. (previously amended) The method of claim 1, characterized in that said groups with a tendency for decomposition are hydroxyl, carbonate, phosphate, halogen or a combination thereof.

3. (previously amended) The method according to any of claim 1-2, characterized in that one phase in the material comprises a construction ceramic in a concentration of 10-95 vol-%.

4. (previously amended) The method according to any of claims 1-2, characterized in that one phase in the material comprises a construction metal in a concentration of 10-95 vol-%.

5. (previously amended) The method of claim 1, characterized in that said composite material comprises hydroxyapatite and/or other apatite in a concentration of 5-80 vol%.

6. (previously amended) The method of claim 1, characterized in that said closing of the system and applying of pressure takes place at temperatures below 900°C for ceramic based composites and for metal based composites below 500°C.

7. (previously amended) The method of claim 1, characterized in that said densification of the material is driven to an end temperature above 900°C for ceramic based composites, or 500-800°C for metal based composites, and to an end pressure above 100 MPa.

8. (previously amended) The method of claim 1, characterized in that said applying of pressure is performed as a partial applying of pressure, before

an end temperature for the densification is reached, and before commencing decomposition of apatite phase, whereby a part of pressure of 0.2-10 MPa is applied.

9. (previously amended) The method of claim 1, characterized in that said densification of the material is performed stepwise, whereby a first part pressure is applied and is maintained up to a first temperature, whereafter a second part pressure is applied and is maintained up to a second temperature, whereafter a possible further is applied, or an end pressure and an end temperature is applied.

10. (currently amended) A method of producing a bioactive composite material, comprising apatite, for dental or orthopedic use, which material comprises groups with a tendency for decomposition, where a densification of the material is performed at high temperatures under pressure, characterized in that the densification is performed in a closed system where applying of a pressure partially or completely takes place before an end temperature for the densification is reached, and before commencing substantial decomposition of apatite phase ~~The method of claim 1~~, characterized in that one or more helping agents are added to a barrier layer at densification by hot isostatic pressing or

to a powder bed at densification by over pressure sintering, in order to further suppress unwanted reactions.

11. (previously amended) The method of claim 10, characterized in that said helping agent is a fine-grained metal powder and/or a hydrate.

12. (previously amended) A bioactive composite material, comprising apatite, for dental or orthopaedic use, which comprises groups with a tendency for decomposition, characterized in that it has been produced by the method of claim 1.

13. (previously added) The method of claim 3, wherein the construction ceramic is an oxide in a concentration of 40-95 vol-%.

14. (previously added) The method of claim 13, wherein the construction ceramic is aluminium oxide, zirconium oxide, or titanium oxide in a concentration of 55-85 vol-%.

15. (previously added) The method of claim 4, wherein the construction metal is Fe or Co-Cr based or Ti, Ta, or Zr based, in a concentration of 40-95 vol-%.

16. (previously added) The method of claim 15, wherein the Fe or Co-Cr based or Ti, Ta, or Zr based construction metal has a concentration of 55-85 vol-%.

17. (previously added) The method of claim 5, wherein the composite material has a concentration of 25-45 vol%.

18. (previously added) The method of claim 6, wherein the composite is a ceramic-based composite and closing of the system and applying of pressure takes place at temperatures below 700°.

19. (previously added) The method of claim 6, wherein the composite is a metal-based composite and closing of the system and applying of pressure takes place at temperatures below 500°C.

20. (previously added) The method of claim 7, wherein the composite is a ceramic-based composite and densification of the material is driven to an end temperature above 1100°C and to an end pressure that is above 100 MPa and up to 200 MPa.

21. (previously added) The method of claim 7, wherein the composite is a metal-based composite and densification of the material is driven to an end temperature of 600-800°C and to an end pressure that is above 100 MPa and up to 200 MPa.

22. (previously added) The method of claim 9, wherein the first part pressure applied is a pressure of about 0.2-5 MPa and the second part pressure applied is a pressure of about 1-10 MPa.